

## COMMENTS

Comments received for CHA Draft Report (*December 2, 2009*, CHA Project No. 20085.6000.1510) for the Assessment of Dam Safety of Coal Combustion Surface Impoundments Allegheny Energy Supply Company – Pleasants Power Station, Willow Island, WV. Comments include;

- EPA comments - None;
- WV DNR comments received on January 18, 2010; and
- Allegheny Energy comments received on January 27, 2010.



FW Comments on Draft Report Allegheny Pleasant's Power Station 02-03-10  
From: Harris IV, Warren  
Sent: Wednesday, February 03, 2010 2:21 PM  
To: Everleth, Jennifer; Adnams, Katy  
Subject: FW: Comments on Draft Report: Allegheny Pleasant's Power Station

Attachments: Comments on Pleasants Power.doc; Company Comments on Draft Report 1.27.10.pdf

-----Original Message-----

From: Kohler, James@epamail.epa.gov [mailto:Kohler, James@epamail.epa.gov]  
Sent: Wednesday, February 03, 2010 11:36 AM  
To: dennis.a.miller@mco.com; Hargraves, Malcolm; Harris IV, Warren  
Cc: Hoffman, Stephen@epamail.epa.gov  
Subject: Comments on Draft Report: Allegheny Pleasant's Power Station

Dennis/CHA:

EPA/state/company comments are attached, please address as appropriate. As before: we will be including these comments as a separate document and posting to the web along with the draft and final reports.

Note: the company is requesting a rating change to "Satisfactory". Please let us know if you intend to change the rating. Per usual, changes do not need to be made to your recommendations or any other parts of the report based on these comments unless you feel the additional information provided in the comments warrants a change.

If there is any question about how to address a comment, please inform Steve and myself and we can discuss.

Thank you!

Jim

(See attached file: Comments on Pleasants Power.doc)(See attached file: Company Comments on Draft Report 1.27.10.pdf)

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Jim Kohler, P. E.  
Environmental Engineer  
LT, U. S. Public Health Service  
U. S. Environmental Protection Agency  
Office of Resource Conservation and Recovery  
Phone: 703-347-8953  
Fax: 703-308-0514  
\*\*\*\*\*

Final Report  
Assessment of Dam Safety of Coal Combustion Surface Impoundments  
Allegheny Energy – Pleasants Power Station  
Willow Island, WV

**Comments Received from the EPA  
In Response to CHA Draft Report dated December 2, 2009**  
*None Received*

CHA Project No. 20085.6000.1510



Comments on Pleasant's Power Station

EPA HQ – None.

EPA Region – None.

State –

From: "Long, Brian R" <Brian.R.Long@wv.gov>  
To: James Kohler/DC/USEPA/US@EPA, Rick Rogers/R3/USEPA/US@EPA,  
Carol Amend/R3/USEPA/US@EPA, Clark Conover/R3/USEPA/US@EPA,  
Martin Matlin/R3/USEPA/US@EPA, "Zeto, Michael A" <Michael.A.Zeto@wv.gov>,  
"Shriver, Delbert G" <Delbert.G.Shriver@wv.gov>  
Date: 01/18/2010 08:47 AM  
Subject: RE: Comment Request on EPA's Draft Coal Ash Impoundment Assessment Reports

Jim - Thank you for the opportunity to comment on the R. Paul Smith dams and the McElroys Run Dam in West Virginia. We will not comment on the draft reports due to WVDEP's continuing compliance effort at R. Paul Smith dams and the Satisfactory condition assessment for McElroys Run Dam from the Fly Ash Dam/Landfill Condition Evaluation Report issued by WVDEP in November 2009.

The WVDEP Orders regarding the R. Paul Smith dams are attached. Allegheny Energy agreed to repair the upstream slope of R. Paul Smith # 3 Dam (NID# WV00308) in accordance with a plan previously approved by WVDEP for the upstream embankment. WVDEP's January 7, 2010, approval letter for repair of the upstream slope is also attached.

If you have questions, please contact Mike Zeto, or me.

Brian Long, Program Manager  
WV Department of Environmental Protection  
Environmental Enforcement/Dam Safety  
601 57th Street SE  
Charleston, West Virginia 25304-2345  
(304) 926-0499 ext 1005  
fax: (304) 926-0478  
Email: brian.r.long@wv.gov  
<http://www.wvdep.org/ee/damsafety>

Company - See attached document dated January 27, 2010.

Final Report  
Assessment of Dam Safety of Coal Combustion Surface Impoundments  
Allegheny Energy – Pleasants Power Station  
Willow Island, WV

**Comments Received from WV DEP  
In Response to CHA Draft Report dated December 2, 2009**  
*Email dated January 18, 2010 and*

CHA Project No. 20085.6000.1510



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EPA Region – None.

State –

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Final Report  
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Allegheny Energy – Pleasants Power Station  
Willow Island, WV

**Comments Received from Allegheny Energy**  
**In Response to CHA Draft Report dated December 2, 2009**  
*Comments Received January 27, 2010*

CHA Project No. 20085.6000.1510



Comments on Pleasant's Power Station

EPA HQ – None.

EPA Region – None.

State –

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Company - See attached document dated January 27, 2010.



Environment, Health & Safety

800 Cabin Hill Drive  
Greensburg, PA 15601

FEDEX and EMAIL

January 27, 2010

Mr. Stephen Hoffman  
US Environmental Protection Agency  
Two Potomac Yard  
2733 S. Crystal Yard  
5<sup>th</sup> Floor: N-56  
Arlington, VA 22202-2733  
Hoffman.stephen@epa.gov

Dear Mr. Hoffman:

**PLEASANTS POWER STATION  
McELROY'S RUN DAM  
WILLOW ISLAND, WV  
ALLEGHENY ENERGY SUPPLY COMPANY, LLC  
COMMENTS TO THE ASSESSEMENT OF DAM SAFETY COAL  
COMBUSTION SURFACE IMPOUNDMENTS DRAFT REPORT**

Allegheny Energy Service Corporation as an agent for Allegheny Energy Supply Company, LLC (Allegheny Energy) is responding with their comments on the Draft Report of the Assessment of the Dam Safety Coal Combustion Surface Impoundment for the Pleasants Power Station.

The draft report was transmitted to Allegheny Energy under an EPA letter dated December 28, 2009 from Mr. Matt Hale, Director of the Office of Resource Conservation and Recovery. The report is understood to have been prepared in conjunction with an October 13-14, 2009 site assessment.

Allegheny Energy thanks the Environmental Protection Agency (EPA) and their subcontractor, CHA for performing an independent inspection of the McElroy's Run Dam at the Pleasants Power Station which found that the facility is expected to perform acceptably under all required loading criteria. Allegheny Energy is appreciate the opportunity to respond to comments made by the EPA in the December 2, 2009 report.

We realize that it is difficult to assimilate the information and evaluate the data in a relatively short time for a facility of this magnitude that has had construction activity for about thirty years. We have several items of clarification in the EPA report sections on existing information and request changes in the final version of the EPA report based on the supplemental information presented herein.

Mr. Stephen Hoffman  
US Environmental Protection Agency  
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1. **Page 2, 1.2.1 State Issued Permits**

Comment: The current NPDES permit is WV0079171 effective August 15, 2009 through July 15, 2014.

2. **Page 8, Figure 2; Page 10, Figure 4, and in text**

Comment: The CCB landfill is not un-compacted. See item 5 for discussion of the compaction procedures. Please remove the term “un-compacted” from all references in the report relative to the CCB landfill.

3. **Page 27, Figure 17,**

Comment: The view is looking “west.”

4. **Page 66, 4.1 Acknowledgement of Management Unit Condition**

*EPA Comment:*

*I acknowledge that the management unit referenced herein was personally inspected by me and was found to be in the following condition: **Fair**.*

*A management unit found to be in fair condition is defined as one in which acceptable performance is expected under all required loading conditions (static, hydrologic, seismic) in accordance with the applicable safety regulatory criteria. Minor deficiencies may exist that require remedial action and/or secondary studies or investigations.*

*CHA presents recommendations for maintenance and further studies to bring these facilities into Satisfactory in the following sections.*

Allegheny Energy Response:

This facility has been designed in accordance with generally accepted engineering principles and practices for dams and embankments.

The construction of the facility has been monitored full-time by well-qualified geotechnical specialists during the critical construction stages.

The CHA field inspection found no indications of potential stability failures.

CHA’s review of the design and construction information did not find any design flaws or unusual or risky design parameters, procedures, or excessively steep slope geometries. The entire design and construction plans have been reviewed and approved by WVDEP Dam Safety.

The embankment is designed with internal drainage and is well-drained as evidenced by the long-term piezometer data. Minor fluctuations in the piezometer data are well below the levels that could cause stability problems with the embankment face.

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In summary, there is no data to suggest there are any stability problems with this facility. Allegheny Energy and its employees take great pride in the operation and maintenance of the Pleasants Power Station and McElroy's Run Dam. With a history of successful operation at McElroy's Run Dam spanning over thirty years, Allegheny Energy believes the dam warrants a rating no less than 'Satisfactory' – the EPA definition of 'Fair' notwithstanding.

## 5. Page 66, 4.2 Surface Degradation

### *EPA Comment:*

*In general, the embankment slopes were in acceptable condition. However, several areas of thin vegetation, erosion rills and animal burrows were observed on both the upstream and downstream slopes of the dam. Continued vigilance to these types of issues is always warranted on an earthen embankment. In addition, we recommend grading be performed on the active work bench areas to minimize concentrated stormwater run-off flows and that the surface of the active work bench be sealed with a smooth drummed roller or dozer operating perpendicular to slopes (as opposed to up and down) when work ceases for more than a couple of days or when heavy rain is expected. Other best management practices for stormwater pollution prevention, such as silt fence around temporary stockpiles of ash, are also likely to improve runoff characteristics.*

### Allegheny Energy Response:

Allegheny Energy concurs with the reviewers' comment that "In general, the embankment slopes were in acceptable condition" (p.66 of EPA/CHA report). Occasional areas of thin vegetation, erosion rills, and animal burrows on the slopes of the dam are ongoing maintenance issues that cannot be entirely avoided. Recognizing that continued vigilance is required, Allegheny Energy instituted a program years ago of weekly inspections by a team of personnel from the station that reports directly to the Manager, Engineering and the Manager, Bulk Materials. This practice alerts supervisory personnel to possible unsatisfactory conditions and enables Allegheny Energy to evaluate site conditions and take appropriate action on a regular basis.

Allegheny Energy's present construction practices include the BMP of collecting and redirecting stormwater to minimize surface erosion off the active benches. Allegheny Energy performs grading on active work bench areas in a manner that directs surface water towards armored channels that lead to sedimentation ponds and avoids over-slope flow conditions. Silt fencing is not practical for the active landfill bench.

Allegheny Energy overbuilds slope faces between benches as flyash is being placed and then cuts them back to 3H:1V when the next bench is to be created. Some localized erosional rilling of temporary slope faces can therefore be tolerated without significant problems.

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Allegheny Energy trucks the ash to the site, spreads and compacts each lift of ash with a rubber-tired Michigan high-lift and, in effect, seals the bench as work progresses. All lifts are compacted sufficiently to support traffic of heavy trucks that deliver the ash. Slope faces are tightened using a dozer that operates upslope (rather than on contour) so that the grouser indentations run generally parallel to the slope contour for the purpose of retarding slope runoff. Allegheny Energy believes that its present earthwork construction practices are sound and are consistent with accepted environmental standards.

Since this is an active disposal area, some un-vegetated areas will always exist in the active placement areas. The design considered that and directs all runoff from the facility to sedimentation ponds that remove the sediment, prior to the water being pumped back to McElroy's Run Impoundment. The fact that the sediment pond requires cleanout no more often than once per two to three years indicates that the embankment seeding, grading, and erosion control practices are satisfactory and meet industry and regulatory standards.

Allegheny Energy believes that the reviewer's comments regarding surface degradation do not totally reflect the actual maintenance practices being performed at the disposal area.

**6. Page 67, 4.3 McElroy's Run Dam Hydrologic and Hydraulic Analysis**

*EPA Comment:*

*We recommend that confirmation of stormwater drawdown times be made. Currently there is conflicting statements in various reports reviewed by CHA as to what rate the primary spillway and siphon outlet can drain storm surcharges from the reservoir. CHA also recommends that McElroy's Run dam be evaluated for the current West Virginia regulations to verify that it can safely pass or store the full PMP storm event.*

Allegheny Energy Response:

McElroy's Run dam was designed to safely pass 80% of the full PMP storm event. This criterion was set by agreement with the WVDEP in 1977 and continues to be in effect.

With respect to apparent conflicting statements relative to drawdown rates, please provide specific references and page numbers, so that we can determine if there is conflicting information and if some action is required as a result of this information.

**7. Page 67, 4.4 McElroy's Run Dam Recommendations for Additional Stability Analyses**

*EPA Comment:*

*Allegheny Energy's consultant, GAI, concluded that storm surcharges could not be removed from the reservoir quickly enough for a rapid drawdown condition to develop. As mentioned in Section 4.3, there is conflicting information on the rate of drawdown possible at this site. In*

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*addition, while CHA understand that rapid drawdown via pumping or other discharge methods may be undesirable for a waste disposal impoundment, CHA suggests that in the event of emergency at the facility, rapid drawdown may be more desirable to reduce hydrostatic pressures on the dam, thereby preventing a more catastrophic collapse. There have also been documented case histories where other types of failure (such as a gate failure) have resulted in rapid drawdown conditions developing which have led to a domino effect and made the situation worse. For these reasons, CHA recommends that a rapid drawdown analysis be performed. CHA was also not provided with a Flood Pool loading condition stability analysis, which while not specifically required under WVDEP regulations, US Army Corps of Engineers guidelines in EM-1110-2-1902 suggest a factor of safety under flood pool conditions of 1.4 is appropriate. Again, since there is the possibility that slow drainage of storm surcharge will occur, confirmation of drainage of the storm surcharge in the required time, and a stability analysis showing that the embankment is stable at the raised flood pool should be made.*

Allegheny Energy Response:

Allegheny Energy continues to be of the opinion that storm surcharges cannot be removed from the reservoir quickly enough for a rapid drawdown condition to develop. In addition, the type of riser structure and gates used at this facility have an extremely low potential to result in an unintended rapid drawdown condition. Therefore Allegheny Energy disagrees that there is any reason to perform a rapid drawdown analysis. In addition, the need for a stability analysis with a surcharge pool is also unwarranted in this case, because by inspection of the cross section and internal drainage, it is obvious that a high surface of seepage will not develop in the downstream face of the embankment during a surcharge condition. Without an increase in the surface of seepage through the embankment, the results of stability analyses of the downstream slope will not change from that under normal pool conditions.

**8. Page 68, 4.5 McElroy's Run Dam Recommendations for Additional Soil Behavior Analyses**

*EPA Comment:*

*CHA was not provided with an evaluation of liquefaction susceptibility of the foundation or dam embankment soils. While the foundation soils do not appear to be liquefaction susceptible, this should be verified. The majority of the dam is constructed from fly ash. While reports suggest the fly ash was compacted during construction, soil properties used in stability analyses were reportedly based on the engineer of record's experience with no site specific backup of these properties. In addition, some of the soil strata defined in the slope stability analyses (as summarized in Table 4) were also reported to be assumed values. CHA recommends that soil strata having an impact on the overall stability of McElroy's Run Dam have site specific verification of in situ soil properties determined, and stability subsequently verified if properties vary from those used in previous analyses. This verification should include an evaluation of the liquefaction susceptibility of the fly ash used to construct the embankment.*

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Allegheny Energy Response:

The program of soil testing that has been conducted over the many years of construction of the dam and fly ash disposal area to evaluate foundation and slope stability issues has provided verification of the soil properties and substantiation of stability analyses where presumptive soil properties were used.

None of the soil onsite is considered to be susceptible to liquefaction, especially in this low seismic activity region. The foundation soils and the fly ash fill are not composed of loose, clean, saturated sands that are most susceptible to liquefaction. The foundation soils are medium dense to dense and contain substantial quantities of silt and clay. The fly ash fill has been compacted, is not saturated, and contains a high percentage of 'fines' (minus #200 sieve material). These characteristics are inconsistent with the properties of a soil susceptible to liquefaction. Thus, a liquefaction analysis is not warranted and we request that the conclusions be revised accordingly.

**9. Page 68, 4.6 McElroy's Run Dam Movement and Piezometer Data Changes**

*EPA Comment:*

*The recent instrumentation reports suggest that a couple of piezometers that formerly were dry have seen as much as 10 feet of water in them. During this same period the apparent movement of the dam has shifted from a trend of the instruments reading southwesterly movement (i.e., upstream toward the left abutment), to a trend suggesting downstream northeasterly movement. CHA recommends that in light of changing piezometer level readings, a further evaluation of the water levels and survey data be performed to confirm that these data are not indicating a change in the behavior of the embankment. We understand that some instruments have become inactive because of ongoing landfill operations. If the loss of these instruments is hampering an understanding or clear definition of conditions in the dam, replacement instrumentation is warranted.*

Allegheny Energy Response:

The only instruments that had become inactive (non-functional) were piezometers CP-2, CP-6, and CP-10. While there was earlier consideration of the need to replace all of the non-functional instruments, in February of 2009 they were all replaced in the same locations by piezometers that bear the same identification numbers. One other piezometer recently became inactive at the time of this writing, and Allegheny Energy is planning to replace it. All monuments and benchmarks are available for surveying.

The eleven dam embankment piezometers have generally been dry, although between January 2006 and the present, water has occasionally been found in four of them -- CP-1, CP-1A, CP-4, and CP-8. These piezometers measure the pressure head in bottom ash drainage layers at the base of the fly ash embankment. CP-8 has exhibited a general, long term decrease in water

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level. The other three piezometers, while generally dry, have experienced a few, sporadic one- to ten- foot upticks in water level for periods of a few weeks to a few months, as exemplified by the spike-decay pattern in CP-1 in the early months of 2007. Allegheny Energy attributes the upticks in CP-1A, CP-4, and CP-8 simply to occasional, relatively infrequent influxes of groundwater into the bottom ash drainage layers.

As indicated by Gauges 15 through 19, settlement of the embankment was essentially complete by July of 2003, as were the relatively uniform lateral displacements to the southwest. Apparent lateral displacements subsequent to that time are believed to be aberrations that are independent of the hydrologic events responsible for the observed water level fluctuations in the embankment piezometers. GAI evaluates and comments on the potential implications of the lateral displacement and water level data in the annual inspection reports for this facility. Thus, this issue is evaluated and addressed on a regular basis.

**10. Page 69, 4.7 McElroy's Run Dam Routine Inspection Procedures**

*EPA Comment:*

*West Virginia regulation require inspections be made following a storm event equal to or greater than a 50-year, 6-hour rainfall. The Monitoring and Emergency Action Plan and Operations Plan for McElroy's Run Dam indicates inspections are made following storm events equal to a 25-year, 24-hour storm event. Because these storm events are of different durations, it is difficult to directly compare which would have a greater likelihood of causing erosion or sloughing from saturation. CHA recommends the inspection procedures for McElroy's Run Dam be clarified to be consistent with West Virginia regulation, and include storm events as required as well if deemed appropriate by Allegheny Energy and/or their consultant.*



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Allegheny Energy Response:

The requirement for an inspection following a 25-year, 24-hour storm event is an existing provision of the Monitoring and Emergency Action Plan and the Operations Plan for McElroy's Run Dam. This protocol has been reviewed and approved by the West Virginia DEP and is quite clear. Allegheny's position is that there is no compelling technical justification for a reconsideration of the frequency of inspections.

We appreciate the opportunity to comment on the draft report and will be pleased to answer any questions regarding this information. Should you have any questions or require any additional information, please contact Gary Haag, P.E. (724) 830-5459.

Sincerely,

A handwritten signature in black ink that reads 'Daniel C. McIntire'.

Daniel C. McIntire  
Vice President, Generation Operations

Cc: F. Barry Newman, P.E.  
Vice President and Geotechnical/Structural Group Manager  
GAI Consultants, Inc.  
385 Waterfront Drive  
Homestead, PA 15120-5005